

**Invasive Species
Invitational Test
01/21/17**

- **You have 2 minutes per station, there are 22 stations.**
- **You will be moving clockwise to the next station.**
- **Each question is worth 1 point, unless otherwise noted.**

Station 1



1. Identify the Species.
2. A Colorado homeowner says he removed all of the flowering plants of this species from his property, but they came back the next year! What did he do wrong?
3. How does this species spread its seeds?



4. Identify above species, which was introduced to the USA as an ornamental.
5. In what type of natural environment does this species most commonly occur?
 - a. Dry grasslands with few trees
 - b. High altitude mountain slopes with acidic soil
 - c. Moist, forested floodplains
 - d. Swamps with full sunlight
6. True or False: This plant species, like all others in its family, releases a toxic compound when wounded.

Station 2

Matching: Match the term on the right with its definition on the left.

| Description: | Terms: |
|-------------------------------------------------------------------|----------------|
| 1. A population with very little genetic diversity. | A. Deciduous |
| 2. Trees that shed leaves in the fall when the daylight is short. | B. Endemic |
| 3. Harmful, poisonous, or very unpleasant. | C. Eradicate |
| 4. Living near human habitation or areas disturbed by humans. | D. Homogeneous |
| 5. A species occurring naturally in an area, native. | E. Indigenous |
| 6. To completely remove all members of a species from a habitat. | F. Morphology |
| 7. The physical means by which a species is transported. | G. Noxious |
| 8. The form and structure of an organism | H. Prolific |
| 9. A species restricted to a particular geographical area. | I. Ruderal |
| 10. A high rate of reproduction in a population. | J. Vector |

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

Station 3

Multiple Choice: *Choose the ONE best answer.*

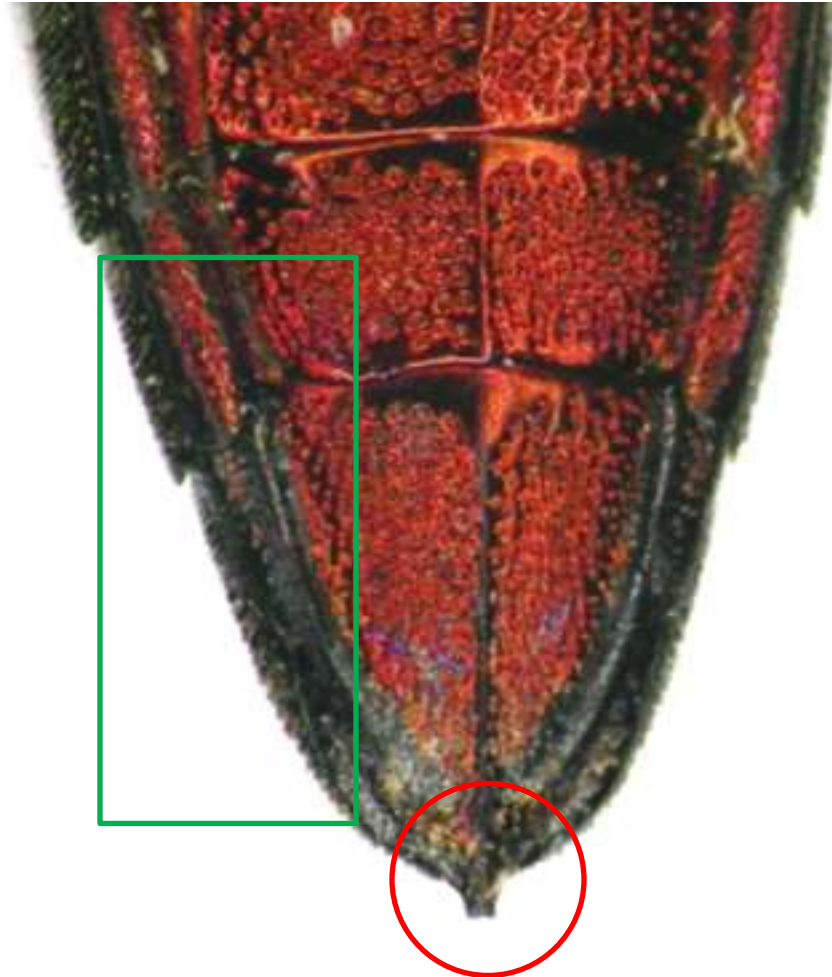
1. Scientists in Lake Michigan have found a relationship between spawning peaks in zebra mussels, and the high availability of this food source.
a. phytoplankton b. zooplankton c. minnows d. curlyleaf pondweed e. elodea
2. The chemical TFM is being considered for zebra mussel control due to its success with which other invasive species?
a. Asian Carp b. Round Goby c. Rusty Crayfish d. White Perch e. Sea Lamprey
3. Which of the following is not a viable form of biocontrol for invasive weeds
a. goats b. beetles c. moth larvae d. birds e. fungi
4. Which of the following is not an aquatic invasive species found in Ohio?
a. White Perch b. Northern Snakehead c. Ruffe d. Rusty Crayfish e. Round Goby
5. Whirling disease is caused by an invasive German parasite that invades juvenile fish (fingerlings and fry) and causes skeletal deformation and neurological damage. Fish "whirl" in an awkward, corkscrew-like pattern instead of swimming normally, find feeding difficult, and are more vulnerable to predators.
Which 2 economically important species of fish are affected by this disease?
a. trout & bass b. perch & salmon c. salmon & trout d. walleye & bass e. perch & Northern pike
6. Which of the following birds is NOT on the U.S. invasive species list?
a. Mute swan b. Canada goose c. House finch d. European starling e. Rock pigeon
7. Which of the following is an example of a human response to an extirpation?
a. reintroducing wolves to the west c. removing invasive pythons from an area
b. cutting the tusks off of elephants d. adding genetic diversity to an isolated population
8. What is the ecological niche of Garlic Mustard, an Ohio invasive plant?
a. meadows b. croplands c. woodlands d. wetlands e. disturbed land
9. Which of the following is a crustacean invader that is spread by humans bringing it as bait?
a. Asian carp b. oarsman c. copepod d. Round Goby e. Rusty crayfish
10. In which ecological niche do Japanese Honeysuckle, an Ohio invasive plant, thrive best?
a. meadows b. croplands c. woodlands d. wetlands e. disturbed land

Station 4



1. Identify species
2. These species are not a problem in their native China because
 - a. There is a tiny bat with large populations there that feed on these bugs.
 - b. They have a species of spider that has evolved with them and feeds on them, controlling their population.
 - c. They have a specific parasitic fungus there that grow on them, controlling their population.
 - d. They have several species of bird there that feed on them, keeping their populations in control.
 - e. They have a wasp there that lays eggs on their back & the wasp larvae eat them.
3. They first arrived from China in which U.S. state?
 - a. Massachusetts
 - b. New York
 - c. Ohio
 - d. North Carolina
 - e. Pennsylvania

Station 5



1. Identify this organism - give both the common and scientific Name.
2. How many species of ash does this organism primarily attack?
3. Give the name of the object in the red circle.
4. Identify the name of the general area shown by the green box.

Station 6



1. Give both the scientific name and common name of this specimen.
2. When was this specimen introduced in the United States?
3. What is the impact of this specimen? 2 points
4. The NOAA proposed a solution to controlling this species. What is the name of the campaign they introduced in 2010?

Station 7



1. Give both the scientific name and common name of this specimen.
2. What is the means of introduction?
3. What is the impact of this species? 2 points
4. What type of water does this species invade?

Station 8



1. Give both the scientific name and common name of this specimen.
2. What is the means of introduction of this specimen?
3. When was this specimen introduced in the United States?
4. Where is this specimen native to?

Station 9



1. What genus of tree does this organism attack?
 - a. *Acer*
 - b. *Fraxinus*
 - c. *Juglans*
 - d. *Quercus*
 - e. *Ulmus*

2. Which of the following is the behavior of this organism that causes tree death?
 - a. The larva feed on plant fluids under the bark, taking essential water & nutrients from the tree.
 - b. The adult feed on the leaves, causing loss of foliage and inadequate photosynthesis to support itself.
 - c. The adults lay eggs in the buds of the tree, preventing growth of new leaves & leading to starvation.
 - d. The adults chew holes in the bark, enabling fungi and other microbes to infect the tree.
 - e. The adults secrete a chemical in their saliva that stunts the growth of the tree.

Station 10



1. This plant takes two years to complete one whole life cycle. The life cycle for this plant would be termed
 - a. annual
 - b. perennial
 - c. biennial
 - d. diurnal
 - e. vestigial

2. Which of the following is NOT an effective method for control of this species?
 - a. Pulling out the root, bagging it, and burying it.
 - b. Controlled burn of the infected area.
 - c. Spraying of herbicide.
 - d. Frequent mowing *before* it can flower.

Station 11



1. Which of the following is the best long-term solution for eradication of this organism?
 - a. A glyphosate type chemical herbicide such as Rodeo for wetlands & Round Up for terrestrial.
 - b. Hand removal of the plant, including the roots.
 - c. Biological control using native insects such as the root-mining weevil & other beetles.
 - d. Importing some insect & animal species from Europe that feed on it there.
 - e. Genetic engineering to create a fungus that attacks that species of plant.

2. The common name for this invasive weed is
 - a. purple loosestrife b. purple crupina c. purple knapweed d. purple larkspur e. purple nightshade

Station 12



1. This animal is in the same phylum as snails and squid and the same class as oysters and clams. Identify the correct phylum & class:
 - a. Phylum Arthropoda, Class Arachnida
 - b. Phylum Mollusca, Class Bivalve
 - c. Phylum Echinodermata, Class Mollusca
 - d. Phylum Invertabrata, Class Cephalopod
 - e. Phylum Porifera, Class Gastropod

2. One female of this organism can release as many as _____ eggs per year.
 - a. One thousand
 - b. One hundred thousand
 - c. One million
 - d. Ten million
 - e. One billion

Station 13



1. Give both the scientific name and common name of this specimen.
2. What specific threat does this specimen cause in Spain and California? 2 points
3. This specimen has unique traits for this type of species. These unique traits allow it invade more effectively. Explain what these traits are. 2 points Tie Breaker 1

Station 14



1. Give both the scientific name and common name of this invasive species.
2. Where is this specimen native to?
3. What is the impact of this specimen? 2 points
4. What is the means of introduction of this specimen?

Station 15








1. Give both the scientific name and common name of this specimen.
2. Where can this specimen currently be found in the United States?
3. When was this specimen introduced to the United States?
4. What is the impact of this species? 2 points
5. Name the Federal Program in place for this specimen. Tie Breaker 2

Station 16








1. Give both the scientific name and common name of this specimen.
2. When was this specimen introduced in the United States?
3. What impact does this specimen have *and* where? 2 points
4. What is the means of introduction for this specimen?
5. Name 2 methods being used for prevention and control of this specimen. 2 points

Station 17

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Station 18

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|  | 2. |
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Station 19



1. Common Name_____
2. Scientific Name_____
3. When introduced to the United States_____
4. Native to _____
5. How long can the seeds remain viable in the soil (years)_____

Station 20



1. Why was Giant Hogweed first introduced into the U.S.?
2. What are the health risks from Native Hogweed?
3. This plant is on the Federal Noxious Weeds List; what are the regulations regarding this plant? Tie Breaker 3

Station 21



1. Give both the scientific name and common name of this invasive species.
2. Where is this specimen native to?
3. Give the date of U.S. introduction of this specimen.
4. What is the impact of this specimen? 2 points

Station 22



1. Body structures such as these spikes around this plant occur over millions of years as species interact with the environment, predators, competition from their own species & other species. This sometimes causes changes in the structure & behavior of species. Place the steps of this change in the proper order: Tie Breaker 4
 - a. natural selection → evolution → genetic diversity → adaptation → survival of the fittest
 - b. Survival of the fittest → adaptation → genetic diversity → evolution → natural selection
 - c. genetic diversity → survival of the fittest → natural selection → adaptation → evolution
 - d. evolution → survival of the fittest → adaptation → genetic diversity → natural selection
 - e. adaptation → survival of the fittest → genetic diversity → natural selection → evolution

2. This species is widely invasive in which part of the U.S.?
 - a. Northeast
 - b. Midwest
 - c. Southeast
 - d. Pacific west coast
 - e. Mid-Atlantic coast